

**WHAT IS CLAIMED IS:**

1     1. A method for determining valid bytes in an m-byte  
 2 word accessed from a burst memory, comprising:  
 3         receiving a plurality of access parameters; and  
 4         generating an m-bit enable word from the access  
 5 parameters and a value of m, said m-bit enable word including  
 6 at least one valid bit corresponding to at least one valid  
 7 byte in the m-byte word.

1     2. The method of claim 1 further comprising making a  
 2 client request to memory, wherein the access parameters  
 3 include:  
 4         a first address; and  
 5         a byte count value indicating a number of bytes in  
 6 said client request to memory.

1     3. The method of claim 2, wherein generating the m-bit  
 2 enable word comprises:  
 3         truncating a portion of the first address to produce  
 4 an n-bit word;  
 5         generating an enable value from the n-bit word, the  
 6 byte count value, and the m value;  
 7         generating an m-bit pre-shifted enable word from the  
 8 enable value and the m value; and



9           shifting the bits in the m-bit pre-shifted enable  
10 word by a value of the n-bit word.

1           4.    The method of claim 3, wherein the n value equals a  
2 base two logarithm of the m value minus one, and said n-bit  
3 word comprises a plurality of bits between and including a  
4 least significant bit and a bit in position n in the first  
5 address.

1           5.    The method of claim 3, further comprising:  
2                in response to the byte count value and the enable  
3 value, determining whether an access to memory satisfies a  
4 client request which generated the access.

1           6.    The method of claim 3, further comprising:  
2                generating a second address for a subsequent access  
3 to memory from the first address and the enable value.

1           7.    The method of claim 1, wherein the value of m is  
2 thirty-two.

1           8.    A memory controller comprising:  
2                a data input to receive a plurality of access  
3 parameters from a client device and an access bytes value  
4 indicating a number of bytes in a burst word from a memory  
5 device; and



6 an enable circuit to determine at least one valid  
7 byte in the burst word in response to the plurality of access  
8 parameters and the access bytes value.

1 9. The memory controller of claim 8, wherein the  
2 plurality of access parameters include:

3 a first address; and

4 a byte count value indicating a number of bytes in a  
5 client request to memory.

1 10. The memory controller of claim 9, further  
2 comprising:

3 an enable word generator to generate an enable word  
4 including at least one valid bit corresponding to the at least  
5 one valid byte in the burst word.

1 11. The memory controller of claim 10, wherein the burst  
2 word comprises an m-byte word and the enable word comprises an  
3 m-bit word.

1 ~~12.~~ A system comprising:

2 a memory device comprising a plurality of memory  
3 elements, each memory element having an associated address;  
4 a client device;



5 a bus to pass data between the memory device and the  
6 client device; and

7 a memory controller to control an access by the  
8 client device to an m-byte burst word in the memory device  
9 over the bus, said memory controller operating to receive a  
10 plurality of access parameters from the client device and  
11 determine at least one valid byte in the m-byte word in  
12 response to the plurality of access parameters and a value of  
13 m.

1 13. The system of claim 12, wherein the memory  
2 controller comprises an enable word generator to generate an  
3 enable word including at least one valid bit corresponding to  
4 the at least one valid byte in the burst word.

1 14. The system of claim 12, wherein the memory  
2 controller is operative to receive a client request to memory,  
3 and wherein the plurality of parameters include:

4 a first address; and

5 a byte count value indicating a number of bytes  
6 in said client request to memory.

1 15. The system of claim 14, wherein the memory  
2 controller is operative to determine a second address for a  
3 subsequent access for the plurality of access parameters.



1 16. The system of claim 15, wherein the client is  
2 operative to store the second address.

1 17. The system of claim 12, wherein the memory device is  
2 a burst memory device.

1 18. The system of claim 12, wherein the memory  
2 controller is operative to determine whether the access is a  
3 last access required to satisfy a client request.

1 19. The system of claim 12, wherein the bus comprises a  
2 read bus and a write bus.

1 ~~20.~~ Apparatus, including instructions residing on a  
2 machine-readable medium, for determining valid bytes in an m-  
3 byte word accessed from a burst memory, said instructions  
4 causing the machine to:

5 receive a plurality of access parameters; and  
6 generate an m-bit enable word from the access  
7 parameters and the m value, said m-bit enable word including  
8 at least one valid bit corresponding to at least one valid  
9 byte in the m-byte word.

1

002701" 92548960



1        21. The apparatus of claim 20, wherein the access  
2 parameters include:  
3            a first address; and  
4            a byte count value indicating a number of bytes in a  
5 client request to memory.

1        22. The apparatus of claim 21, wherein the instructions  
2 to generate the m-bit enable word comprise instructions  
3 causing the machine to:

4            truncate a portion of the first address to produce  
5 an n-bit word;

6            generate an enable value from the n-bit word, the  
7 byte count value, and the m value;

8            generate an m-bit pre-shifted enable word from the  
9 enable value and the m value; and

10           shift the bits in the m-bit pre-shifted enable word  
11 by a value of the n-bit word.

1        23. The apparatus of claim 22, wherein the n value  
2 equals a base two logarithm of the m value minus one, and said  
3 n-bit word comprises a plurality of bits between and including  
4 a least significant bit and a bit in position n in the first  
5 address.



1        24. The apparatus of claim 22, further comprising  
2 instructions that cause the machine to:  
3            determine whether an access to memory satisfies a  
4 client request in response to the byte count value and the  
5 enable value.

1        25. The apparatus of claim 22, further comprising  
2 instructions that cause the machine to:  
3            generate a second address for a subsequent access to  
4 memory from the first address and the enable value.

1        26. The apparatus of claim 20, wherein the value of m is  
2 thirty-two.

002101-92543960